

AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior versions of claims in the application.

1-5. (Canceled)

6. (Currently amended) ~~[[A]]~~ An isolated or purified protein comprising the amino acid sequence represented by SEQ ID NO:2 and having L-rhamnose isomerase activity.

7. (Currently amended) ~~[[A]]~~ An isolated or purified protein comprising an amino acid sequence ~~in which one or several amino acids have been deleted, replaced, or added in the amino acid sequence represented by SEQ ID NO:2~~ encoded by a DNA sequence that hybridizes with the nucleotide sequence of SEQ ID NO:1 at stringency conditions comprising a wash with a buffer containing 0.1x SSC and 0.1% SDS at 65°C and having an L-rhamnose isomerase activity.

8. (Currently amended) The protein according to Claim 6 or 7, wherein the L-rhamnose isomerase activity is specified by the following physicochemical properties:

(i) an action

which catalyzes an isomerization reaction represented by any of the bold black lines in Fig. 7, Fig. 8 and Fig. 9;

[[ro]] (ii) an active pH and an optimal pH

in which the active pH ranges from 7.0 to 10.0 and the optimal pH is 9.0;

[[ha]] (iii) pH stability

in which it is stable within the pH range of 6.0 to 11.0 in the case where it is kept at 4°C
for 1 hour at various pH values;

[[ni]] (iv) an active temperature and an optimal temperature

in which the active temperature ranges from 40 to 65°C and the optimal temperature is
60°C;

[[ho]] (v) a temperature stability

in which it is stable at 40°C for 10 minutes and ~~remains at 90% or more~~ retains at least
90% activity even at 50°C for 10 minutes;

[[he]] (vi) an effect of a chelating agent

in which its activity is ~~hardly inhibited even if it coexists with EDTA or EGTA, which is~~
~~a chelating agent, during the measurement of its activity~~ not substantially inhibited by EDTA or
EGTA;

[[to]] (vii) an effect of a metal ion

in which about 30% of the activity is inhibited by 1 mM cobalt ion; and

[[chi]] (viii) a molecular weight by the SDS-PAGE method

which is about 43,000.

Preliminary amendment
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9-16. (Canceled)